POND
DESIGN AND CHECK DATA REQUIREMENTS

The following items must be addressed in the design folder for the Pond. The following pages shall be included:

(1) Table of Contents
(2) Design Data Summary
(3) Soils and Foundation Data
(4) Engineering Drawings
(5) Construction Specifications
(6) Operation and Maintenance Plan
(7) Erosion and Sediment Control Plan
(8) Construction Check Data

Listed below are specific items that are required in the design:

Table of Contents

This organizes the design folder.

Design Data Summary

Important data is recorded and is consistent with the standard and specification. This includes:

- Survey data
- Geologic investigation
- Sediment and detention storage volumes
- Hydrology and hydraulics
- Dimensions and material requirements for structures (earthfill, drainfill, and all appurtenances)
- Vegetation requirements
- Outlet stability

Soils and Foundation Data

Document compliance with before digging?

Written soils description for test pits and site specific comments are included?

Does the investigation go at least 2 feet deeper than the planned embankment cutoff trench?

Include soils lab data and liner calculations where applicable.

Document need for rock excavation, drainage, isolation from open foundation rock, and depth limitations based on soils investigation.

Engineering Drawings

<u>GENERAL</u>
On each drawing sheet, the title block should show the operator's name, type of operation, county and the persons involved in drawing, designing, and checking the pond.

All pond designs require approval by a registered Professional Engineer or an Engineer with NRCS job approval authority for the type, dimensions and capacity of the pond. If a DEP permit is required, additional details may be needed.
Listed are items that should be included:

<u>PLAN VIEW SHEET(S)</u>
North arrow
Utilities/roads
Bench mark(s)
Scale
Legend
Access
Centerlines
X-section locations
Construction limits
Borrow area
Spoil area
PA One-Call statement

<u>SITE CONTOUR SHEET</u>
(Preferably same as Plan View Sheet)
North arrow
Bench mark(s)

Scale
Legend
Test pit and drill hole locations
Centerlines
Contour lines
Property lines
Water courses
Structure locations

CROSS-SECTION SHEET(S)
Scale(s)
Test pit and drill hole profile(s)
Embankment with any zones
Spillway(s)
Spillway (open and pipe) profiles
Concrete & reinforcement
Drainage configurations
Reference to detail drawings

Construction Specifications

Enclose the applicable specification(s),e.g. 378, 521, and complete all site specific items of work in Section 10.

Operation and Maintenance Plan

Is it clearly indicated when the pond should be inspected, appurtenances operated, and maintenance performed.

How is the pond accessed?

Are safety features in place; e.g. fencing?

Is an emergency action plan complete, if required by DEP?

Erosion and Sediment Control Plan

See DEP's Erosion and Sediment Pollution Control Program Manual.

Construction Check Data

QUALITY ASSURANCE PLAN
A site-specific plan that addresses, but is not limited to:

- What specific items need inspection and when?
- Who will do the actual inspection?
- Is any testing equipment required for the inspection?

ONSITE VISITS
The QAP must include, at a minimum, as applicable to the specific job, onsite visits at the:

1. Start of construction
2. Completion of foundation excavation, to observe and record the foundation conditions encountered and compare with the conditions assumed in the design.
3. Installation of earthfill material.
4. Placement of drainfill and/or pond liner material.
5. Starting to close up concrete wall forms.
6. Placing concrete.
7. Connection of pipe sections.
8. Start of seeding.

DOCUMENTATION
A full set of as-built drawings, with construction certification signatures. Any modifications should be recorded in red.

Checked survey notes.

Material certifications, photographs, etc. as applicable.

Contractors' certifications of conformance.